

1992

EDITORIAL

◀ CAREER CONCERNS ▶

- Guidelines to an engineering career (January, p. 161)
- Two views to planning an engineering career (February, p. 168)
- Inflation, the cost of living, and engineering salaries (June, p. 182)
- An industry in flux, but not without hope (December, p. 29)

◀ COMMUNICATIONS ▶

- Fighting to survive in turbulent 1992 (January, p. 33)
- Another PCS hearing stirs conflict over spectrum use (January, p. 43)
- Cellular markets struggle to overcome static (March, p. 33)
- RF technology expands into new ID markets (March, p. 49)
- Legislation would boost GPS marine systems market (March, p. 58)
- Cellular firms fight for PCS market share (April, p. 35)
- Trellis modulation schemes improve system coding gain (April, p. 67)
- Model predicts rain attenuation in satellite links (April, p. 108)
- Spread spectrum gains wireless applications (May, p. 31)
- FCC wins support for new PCS spectrum (June, p. 47)
- On-site testing isolates sources of RF interference (June, p. 93)
- The industry refocuses on commercial products (July, p. 31)
- MM waves aid commercial applications (July, p. 113)
- In the satcom market, the sky's the limit (August, p. 31)
- GPS is growing despite competition (August, p. 41)
- Optical links serve low-noise communications (November, p. 96)

◀ COMPONENTS ▶

- Lumped elements improve phase-shifter design (January, p. 89)
- Apply mixer concepts to RF systems (January, p. 103)
- Make S-parameter measurements in mixed impedances (January, p. 111)
- Cascadable amps reach 2500 MHz in TO-8 housings (January, p. 133)
- Miniature YIG oscillators fit TO-8B packages (January, p. 135)
- Passive parts handle high power levels (January, p. 140)

- Dual amp features variable gain and high bandwidth (February, p. 87)
- Prescalers serve digital or analog circuit applications (February, p. 134)
- Broadband amp drops through noise floor (February, p. 141)
- Satcom synthesizers shave noise from 4.7 to 5.3 GHz (February, p. 150)
- Impedance inverters allow practical coupler design (March, p. 186)
- Monolithic chip retimes data at 622 Mb/s (March, p. 202)
- High-intercept mixer converts 9 to 10 GHz (March, p. 221)
- YIG multiplier integrates broadband amp (March, p. 225)
- Amplifiers offer high intercept points to 1 GHz (March, p. 227)
- Module delivers 6-W output power from 7.2 to 8.4 GHz (March, p. 230)
- Optimize the stability of fast opamps (April, p. 74)
- Lumped-element models characterize DR coupling effects (April, p. 98)
- Understand DRO design methods and operation (April, p. 120)
- RF modules power mobile communications (April, p. 126)
- Unique GaAs diode benefits mixers and detectors (April, p. 132)
- Signal-processing components aid communications (April, p. 140)
- Differential circuit minimizes detector distortion in PLLs (May, p. 145)
- Control theory analyzes phase-locked loops (May, p. 157)
- Picking devices for optimum DRO performance (May, p. 185)
- Silicon MMICs add low-cost power to wireless systems (May, p. 199)
- Variable GaAs MMIC attenuator reaches 2.5 GHz (May, p. 211)
- Flexible cable simplifies RF system upgrades (May, p. 214)
- Locked sources fit cavity performance into tiny package (May, p. 219)
- YIG filter/mixer screens receiver input signals (June, p. 65)
- Preselection aids phase-tracked receivers (June, p. 73)
- Technique improves high-power combiner, divider performance (June, p. 79)
- Directly-modulated DRO drives S-band video links (June,

1992 EDITORIAL INDEX

p. 89)

- Evaluate DRO noise and tuning characteristics (June, p. 99)
- Predict the effect of source mismatch on LNA performance (June, p. 111)
- Amplifiers boost cellular-radio base stations (June, p. 156)
- X-band LO provides stable performance with temperature (July, p. 63)
- Weakly-coupled tank circuits compose narrowband filters (July, p. 69)
- Equivalent circuits depict multicoupled-line configurations (July, p. 81)
- Design a wide range of quiet DRO circuits (July, p. 95)
- DDS source incorporates high-speed DAC (July, p. 120)
- Formulas characterize thermal failure in high-power amps (August, p. 69)
- High-speed driver propels Ku-band ferrite switch (August, p. 103)
- Attenuator steps with 6-b precision from 10 to 1000 MHz (August, p. 155)
- Log-limiting amp catches 3-ns pulses (August, p. 156)
- Bipolar chips send data at gigabit rates (August, p. 159)
- Cost-effective VCOs tune from 300 to 3300 MHz (August, p. 160)
- Avoid overkill when specifying LNAs for phased arrays (September, p. 76)
- Power dividers and combiners support wideband applications (September, p. 101)
- MMICs move into new marketplaces (September, p. 134)
- Samplers downconvert 2 to 18 GHz (September, p. 159)
- Analog multipliers drive component linearization scheme (October, p. 74)
- Opamp circuits void inductors in RF filters (October, p. 96)
- Locked sources offer low noise in small packages (October, p. 116)
- Component line boosts bandwidth of test equipment (October, p. 118)
- Design approach improves MMIC power amplifiers (November, p. 59)
- Transmission lines accurately model autotransformers (November, p. 67)
- Dividers pack high performance in small housings (November, p. 114)
- Integrated amp and mixer serve cellular handsets (November, p. 124)
- Filter design enhances frequency-response symmetry (December, p. 73)
- Locked sources offer economy and performance (December, p. 135)
- Crystal oscillators continue to set stability standards (December, p. 140)
- Low-noise amps benefit from austere design (December, p. 154)

COMPUTER-AIDED ENGINEERING

- Simulator mimics Rayleigh fading in mobile radios (Janu-

ary, p. 65)

- Perform full-wave multilayer analysis on a PC (February, p. 125)
- Workstation aids RF signal-processor design (March, p. 177)
- Software tools model cellular uplink subsystem (March, p. 194)
- Software finds faults with coaxial cables (March, p. 220)
- PC filter analysis program delivers workstation power (March, p. 228)
- Program optimizes PLL phase-noise performance (April, p. 78)
- Shift S-parameter test data files to spreadsheets (April, p. 117)
- PC software aids design of active filters (April, p. 134)
- Software tracks US government spending plans (April, p. 137)
- CAD program finds minimum noise measure (May, p. 152)
- Software models high-speed circuit interconnections (May, p. 167)
- Device physics software aids MMIC foundry operations (May, p. 185)
- Low-cost software aids microwave circuit design (May, p. 193)
- Software extends SPICE capability to microwave rates (May, p. 221)
- Floppy disk is more than a filter catalog (June, p. 122)
- Program eases test-code development (June, p. 124)
- Software optimizes circuit parameters (June, p. 126)
- PC tool tackles LC filter design (June, p. 129)
- PC boards are fast-hopping preselectors (June, p. 148)
- CAD program provides accurate filter synthesis (August, p. 119)
- Software connects system components in mere seconds (September, p. 169)
- Spreadsheet program extracts transistor parasitic elements (October, p. 67)
- Orthonormal functions provide curve fitting of experimental data (October, p. 105)
- SPICE circuit yields recipe for PIN diode (November, p. 78)
- EDA software suite sets new level of integration (November, p. 108)
- CAD tool improves SAW-stabilized oscillator design (December, p. 69)
- Software aids the modeling of dual-gate MOSFETs (December, p. 89)
- Schematic entry enhances linear pack (December, p. 110)
- Student software teaches Smith chart (December, p. 114)
- Nonlinear simulator adds models and features (December, p. 117)
- Software masters complex receiver chains (December, p. 120)
- Software reviews receivers/transmitters (December, p. 122)
- Math package adds electronic handbook (December, p. 124)
- Software quickly designs narrowband amplifiers (Decem-

1992 EDITORIAL INDEX

ber, p. 126)

◀ CONFERENCES ▶

- Transistors and tubes triumph at IEDM conference (January, p. 45)
- RF conference concentrates on communications (February, p. 45)
- Analog and digital ICs soar at ISSCC (February, p. 50)
- ARFTG conference probes on-wafer measurements (March, p. 55)
- Conference sorts satellite spectrum (April, p. 46)
- 1992 International Microwave Symposium (May, p. 68)
- Workshop focuses on commercial applications (July, p. 41)
- Gathering studies role of PTFE in circuit design (July, p. 123)
- RF conference looks toward the future (August, p. 46)
- ARMMS group tackles EMC test accuracy (August, p. 49)
- Military show takes path to civil avenues (September, p. 51)
- Measurement group debates issues of test accuracy (September, p. 57)
- Transistors and tubes glow at 38th annual IEDM (November, p. 37)
- Hybrid circuits conference focuses on changing markets (December, p. 39)
- Working toward a wireless world (December, p. 97)
- Products aim at wireless markets (December, p. 102)

◀ CROSSTALK ▶

- Dale Peterson, president and CEO of Signal Technology Corporation (January, p. 49)
- Richard Newman, chairman of Voltronics Corp. (February, p. 57)
- Richard R. Miller, executive vice president and COO of TV Answer (March, p. 61)
- Roger Thornburn, president of Anritsu Wiltron Sales Company (April, p. 51)
- Craig McCaw, chairman and chief executive of McCaw Cellular Communications, Inc. (May, p. 53)
- Eugene W. Niemiec, president and COO of Merrimac Industries, Inc. (June, p. 49)
- Christopher J. Kneizys, vice president and general manager of Micro-Coax Components, Inc. (July, p. 47)
- Robert J. Dankanyin, senior vice president at Hughes Aircraft Co. (August, p. 53)
- Larry Silverman, manager of Microwave Hybrid Div. Engineering at American Electronic Laboratories, Inc. (September, p. 61)
- David B. Leeson, chairman and chief executive of California Microwave, Inc. (October, p. 51)
- Al Wilunowski, executive vice president of Varian Associates, Inc. (November, p. 41)
- Al Torpie, executive vice president of Times Microwave Systems (December, p. 45)

◀ DEFENSE ELECTRONICS ▶

- DOD switches gears with changing budget (May, p. 44)

- NASA upholds role as storehouse of RF technology (May, p. 48)
- New DOD policies emphasize high-tech procurements, R&D (June, p. 33)
- US Air Force advances goals of RISE effort (June, p. 43)
- IsoDoppler and mocomp corrections improve MTI radar (June, p. 117)
- UHF amplifier drives 4-kW transmitter (June, p. 135)
- Optimal program passively finds radar threats (September, p. 87)
- DOD targets more commercial buys (November, p. 27)

◀ DEVICES ▶

- Multiplying DAC has 12-b resolution at rates to 100 MHz (January, p. 120)
- Multi-junction varactors form frequency doublers (February, p. 75)
- TWT delivers high power for satellite uplinks (February, p. 119)
- Power transistors drive Inmarsat amp applications (February, p. 152)
- MMIC process fabricates low-loss GaAs downconverter (March, p. 134)
- Non-alloyed process produces non-Ge tunnel detector (March, p. 160)
- HEMTs fuel low-noise S-band amps (March, p. 164)
- Choose DACs for DDS system applications (August, p. 89)
- GaAs sales gain as markets mature (October, p. 31)
- Specify TWTs by considering modulation needs (October, p. 81)
- Quickly convert S-parameters to add applications (November, p. 91)

◀ FIBER OPTICS ▶

- Fiber optics link terrestrial and satcom terminals (July, p. 100)
- Find optical-receiver transimpedance gain with S-parameters (September, p. 128)

◀ INTERNATIONAL ▶

- A nostalgic look at the industry's early years (March, p. 76)
- Three decades of tubes, tests, and transistors (March, p. 117)
- Russian components and instruments invade the West (June, p. 140)
- Eastern European changes provide new opportunities (September, p. 31)
- Microwave heating: 50 MW and counting (September, p. 41)
- Microwave heating: The next generation (October, p. 39)
- Japan supports "Milli-wave, Inc." (October, p. 49)

◀ MATERIALS ▶

- Packaging: Making it fit a changing market (February, p. 33)
- Tiny surface-mount housing challenges flatpacks to 4

1992 EDITORIAL INDEX

GHz (February, p. 153)

- Service fabricates circuits of all shapes and sizes (May, p. 217)
- Technology is alternative to stripline (December, p. 156)

◀ SUPERCONDUCTORS ▶

- Foundry services fabricate 77-K superconductors (May, p. 212)

◀ SYSTEMS & SUBSYSTEMS ▶

- Connecting the links of the signal chain (February, p. 113)
- Simple concepts illustrate antenna design fundamentals (March, p. 155)
- Method provides pattern analysis of skew offset reflectors (April, p. 93)
- Pricing policy offers cumulative benefits (July, p. 45)
- Equations link cascaded networks using S-parameters (July, p. 76)
- Modular IFM receiver snares 6-to-18-GHz signals (July, p. 118)
- Equations provide accurate third-order IMD analysis (August, p. 75)
- GPS receiver chip targets low-power commercial markets (August, p. 135)
- Design optimization improves IFM/DFD receiver accuracy (September, p. 96)
- Subsystem joins preselector with harmonic mixer (September, p. 107)
- Delay-line design faithfully serves ESM applications (September, p. 119)
- Set-on receiver quickly disarms X-band threats (September, p. 164)
- Amplifier fires 5-kW output power for super collider (September, p. 167)
- Simple approach optimizes ECL clock networks (October, p. 87)
- Cascading sections improve loaded-line phase-shift range (October, p. 100)
- Track moving emitters with Kalman processing (December, p. 83)

◀ TEST & MEASUREMENT ▶

- New models improve frequency-agile signal simulation (January, p. 78)
- Portable set runs array of tests to 26.5 GHz (January, p. 123)
- Synthesizer spans 2 to 20 GHz in VXI format (January, p. 130)
- Self-contained set checks avionics weather radars (January, p. 138)
- Firmware improves 10-to-2000-MHz noise-figure meter (January, p. 142)
- Test system scans circuit EM emissions (January, p. 144)
- Gauge component parameters with simple test setups (February, p. 99)
- Counting the cycles of time and frequency (February, p. 146)
- MM-wave concerns influence antenna test setups (March,

p. 129)

- Monopulse feed improves radar tracking accuracy (March, p. 142)
- Flexible cables ease wafer test probing to 65 GHz (March, p. 206)
- New architecture supports rugged test synthesizer (March, p. 212)
- Digital meters speed through power readings (March, p. 222)
- Radar test set simulates multiple target environments (March, p. 226)
- Scope grabs 4 GSamples/s across 1 GHz (April, p. 138)
- Noise instruments ease automated tests to 40 GHz (April, p. 143)
- Make adjacent-channel power measurements (May, p. 137)
- Smart station speeds wafer-probe calibration (May, p. 226)
- Standard defines safe RF pulsed-power levels (June, p. 83)
- Programmable tuners simplify design verification (June, p. 149)
- Spectrum analyzer improves 40-GHz testing flexibility (July, p. 87)
- Testing methods improve digital RF communications (July, p. 105)
- Derive and measure source pulling figure (August, p. 111)
- Documentation improves project assembly and testing (August, p. 128)
- Service monitors keep pace with cellular tests (August, p. 145)
- Wafer probes aim at economical commercial tests (August, p. 152)
- Stepped-frequency measurements improve IM testing (September, p. 115)
- DDS techniques assist exotic waveform generation (September, p. 140)
- Spectrum analyzers interlock users to performance (September, p. 147)
- Agile system advances automatic load-pull testing (September, p. 152)
- Speedy synthesizers cut spurious levels and signal delays (October, p. 110)
- Synthesizers cut spurious levels from DDS sources (October, p. 117)
- Counter, software combine for complex signal measurements (October, p. 120)
- Software package links instruments for ATE control (October, p. 122)
- Use noise to test satcom, digital systems (November, p. 101)
- Signal analyzers dissect time-varying waveforms (November, p. 118)
- Card transforms PC into 1.6-GHz spectrum analyzer (November, p. 122)
- Instrument melds spectrum and network analyzers (December, p. 149)
- Radio test set takes wide range of measurements (December, p. 153) ••

